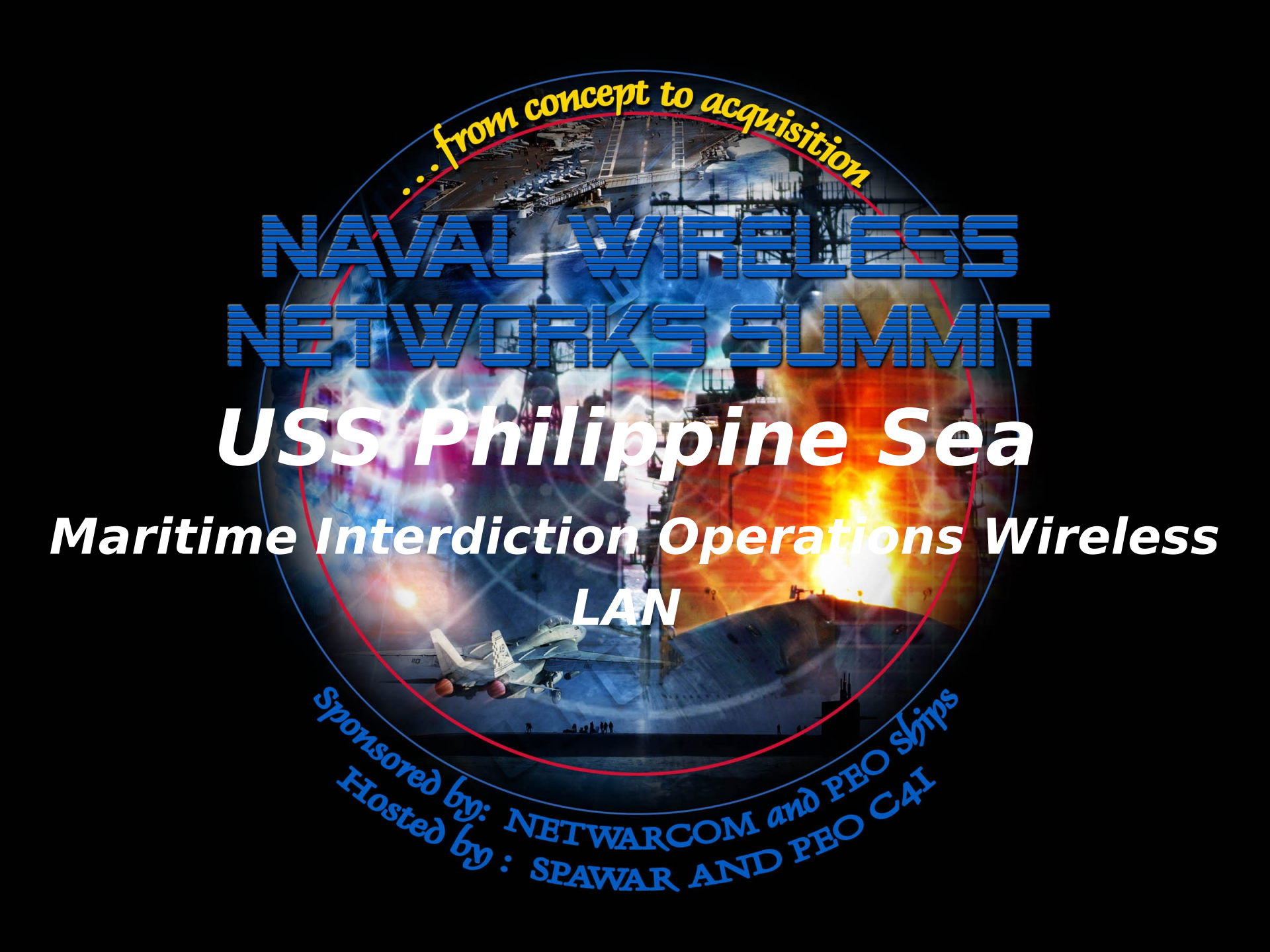

. . . from concept to acquisition
NAVAL WIRELESS NETWORKS SUMMIT
USS Philippine Sea
Maritime Interdiction Operations Wireless LAN
Sponsored by: NETWARCOM and PEO Ships
Hosted by : SPAWAR AND PEO C4I

Tactical Use of a Wireless LAN for E-MIO

Tactical Deficiency

- *Published tactics do not exist that incorporate or support Wireless Local Area Network (LAN) employment during Expanded Maritime Interception Operations (E-MIO) or Leadership Interdiction Operations (LIO).*

Fleet Impact

- *Commercial Off the Shelf (COTS) technology is available TODAY that could have an immediate positive impact on mission accomplishment.*
- *Currently available technology would bring significant POTENTIAL capabilities to the Strike Group.*
- *Expanded INTEL collection and transfer capabilities while minimizing delays and impact to legitimate shipping*

Project Goals/Objectives

Background

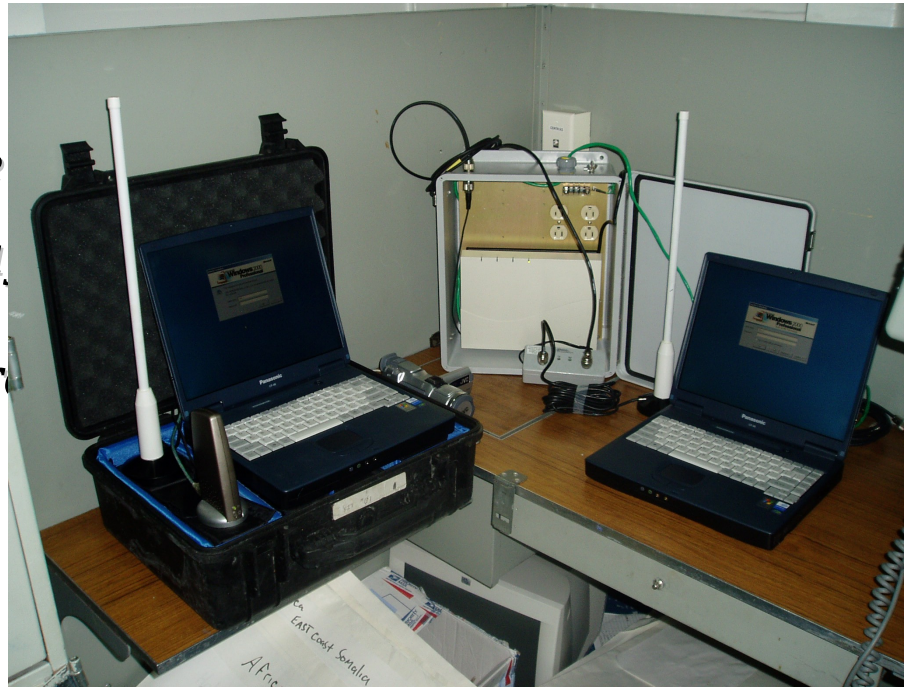
- *PHILIPPINE SEA successfully employed a Wireless LAN in over 30 Operation Enduring Freedom (OEF) E-MIO boardings during Arabian Gulf/Indian Ocean Deployment 2003-2004. The benefits of this system were immediately apparent when information was flowing to non-organic Intel assets within an hour of embarkation.*

Current Capabilities/Limitations

- *NO tactical guidance for the integration of Wireless Technology into E-MIO*
  - *NWP 3-07.11 None / NTTP 3-07.11 None*

Philippine Sea Wireless LAN

- *Total cost $1400*
- *Procured by ships force*
  online retailer in < 5 da
- *Assembled by ship's for*



Initial Requirements

- *Easily carried by one person*
- *Easily assembled and disassembled*
- *Self-contained and independent of any reliance on target vessel*
- *Weather-resistant shipboard enclosure*
- *Compatible with existing VBSS cameras and voice recorders*
- *Effective range >500 yds*
- *Battery life sufficient for normal VBSS operations*
- *Data transfer rate sufficient to transfer hi-resolution Images quickly an effectively*

Evaluation Objectives

- *Speed of intel collection and transfer*
- *Operator feedback and input*
- *Range capability*
- *EMI constraints*
- *Durability in maritime environment*
- *Ideas for further development of system*

Proven Caps And Lims

- *800 yards max range*
- *Transmits 50 high-res (2048x1536) photos in 2*
- *Set up and break down within two minutes*
- *3-hr battery life*
- *Transfers any type of file (.jpg, .txt, .mpeg)*

Wireless LAN Advantages

- *Boarding teams transmit intelligence such as photos of crew, passports & evidence to the Carrier, NAVCENT, and national agencies in near-real time.*
  - *First Intel, usually the crew list, transmitted to higher authority within 25 mins.*
  - *Other intel, such as photos of crew, passports, ships documentation and evidence follow in near real time.*
- *Enables intel orgs to review data in time & provide in-stride collection guidance*
- *Previous methods were time and resource intensive.*
  - *Transferring documents and files by RHIB*
    - *Required extra team members to catalogue the files*
    - *Removed the RHIB from its cover position*
    - *Very slow process, as long as 2 hours before first off-ship transmission*
  - *Using a radio to pass information such as crew lists*
    - *Time intensive*
    - *Tied up a radio circuit*
    - *Required boarding team to read the language that the documents were written in*

Final Assessment

- *Philippine Sea's wireless LAN is operationally suitable and effective*
- *Provides a quantum-leap in VBSS team communication capabilities*
- *Significant future potential*
- *Current limitations not operationally significant and easily surmountable*
- *Continued R&D should be conducted by future deploying units to*

Exploitation of Intel Begins Much More Rapidly Than Was Ever Possible Before.

Wireless LAN Components

- *2 laptops with Microsoft Windows 2000*
- *Proxim Orinoco USB gold connectorized, 128-bit encryption, IEEE 802.11b, and integral 19” pigtail to N-Male*
- *Hypergain range extender 8dbi omni antenna with magnetic base and integral 6’ cable with N-Female connector*
- *Proxim Orinoco AP-1000 access point*
- *Proxim Orinoco PC card gold, 128-bit encryption, IEEE 802.11b*
- *1w amplified 5dbi site survey antenna kit*
- *N-Female to N-Female “bullet” adapter for 1/8” chassis*
- *110 vac drilled equipment mounting plate with hardware, hyperlink instant-cell NEMA box*
- *Hyperlink 8dbi mobile magnetic mount antenna 2.4 Ghz, sealed N-type mount, 12 ft cable.*

Wireless LAN Accessories

- *Pelican water/airtight carrying case (pictured)*
- *Olympus 3.2 megapixel digital camera with 64mb SD memory card (USB capable, used to take this photo)*
- *JVC digital video camera (USB capable, pictured)*
- *Sony digital voice recorder (connected via standard headphone jack, not shown)*